## Russia to Return to Phobos?

Despite crippling budgetary shortfalls, Russia's planetary exploration program is hoping to get at least one mission off the ground soon: a probe to return a rock sample from Phobos, the largest martian moon. But the effort, led by the Keldysh Institute of Applied Mathematics in Moscow, could be no more than a pipe dream unless the researchers do some major fundraising.

Russia hopes to succeed in a try for Phobos where its predecessor, the Soviet Union, stumbled: In the late 1980s, two giant Soviet landers sent to Phobos failed en route. Disaster struck again when the Mars 96 spacecraft plummeted back to Earth shortly after launch. To many, the Mars debacle sounded a death knell for Russian space science (*Science*, 20 June 1997, p. 1780).

**Phobos awaits.**

Whether the new Phobos probe rises like a Phoenix from the ashes may depend on just how big—and expensive—a bird it is. Rather than go with a pricey Proton rocket, Keldysh planetary scientist Mikhail Marov, at a meeting of the American Astronomical Society last week, unveiled plans to launch the new mission as early as December 2004 on a cheap Soyuz-type rocket. Using an ion engine comparable to the one now powering NASA's Deep Space 1 probe, the $120 million spacecraft would reach Phobos in 28 months, then land and take pictures. Next it would drill into the surface and extract a few hundred grams of samples to bring back to Earth in April 2008.

Although the Russians have had a Phobos trip on the books for years, most experts had presumed the project dead, or at least dormant, considering the country's money woes. Marov says his group will almost certainly need outside help. But they best not look NASA's way: According to Rich Terrile of the Jet Propulsion Laboratory, the agency's current Mars program has no room for a new mission with the Russians.

## Hunting Big Berg

**Monster-sized berg B-10A.**

Since the hounds picked up its scent again last July, an iceberg the size of Rhode Island has sparked growing unease as it inches toward the busy shipping lanes off the tip of South America. Now the berg, dubbed B-10A, has a companion: A-22B, a similarly sized superberg. Both promise to fissure and calve in the coming months, spawning hundreds of progeny that could threaten sightseeing cruises and antarctic resupply ships.

It may sound an easy task to track bergs of such immensity, but B-10A went missing last winter. The U.S. Defense Meteorological Satellite Program, which surveils monster bergs from the sky most of the year, puts on its night goggles during the dark antarctic winter and sniffs out icebergs from the heat differences between ice and water. But thermal sensing can't penetrate clouds, which happened to be thick last winter.

Now scientists have a new tool for finding wayward icebergs. Last summer David G. Long of Brigham Young University in Provo, Utah, was imaging sea ice in the southern ocean using NASA's SeaWinds scatterometer, which analyzes the backscatter of radio waves off ocean waves to measure wind speed across the water's surface. Not looking for the missing B-10A, Long nonetheless found it on his first radar run. The berg can run, but it can't hide.

## Listening in on Elephant Love

You might not think it's easy to hide an elephant, but those living in forests can be frustratingly elusive. So instead of macheteing their way to the beasts, scientists have hatched a plan to listen in on the forest dwellers to take a better measure of the threatened population.

A subspecies of Africa's savannah elephants, forest elephants face threats from habitat loss and poachers after their tusks. Previous efforts to track the stealthy pachyderms relied on counting dung heaps. "But that doesn't tell you the whole story," says acoustic biologist Katharine B. Payne of Cornell University in Ithaca, New York.

By eavesdropping on forest elephants' private conversations, Payne's team hopes to determine how many roam together, when they move, and where they go. The first step, she says, is to correlate elephant calls with behaviors. Next March the group will collect video and audio footage of forest elephant activity in a clearing in the Central African Republic. Then in May, the researchers will place audio receivers at a larger, densely forested site in Ghana and use the earlier recordings to interpret the sounds of hidden elephants. They have already deciphered the elephant's love noises: Females ready to mate groan loudly and insistently to summon males as far away as 4 kilometers.

## Scientists Left High and Dry After Crash

If there's ice on the moon, Lunar Prospector didn't find it. On 31 July, NASA deliberately crashed the satellite into a crater near the moon's south pole, in hopes of rousting a vapor plume that would betray the presence of ice. But nothing of the sort was detected.

The violent experiment was devised after earlier observations suggested the moon might harbor ice (*Science*, 13 March 1998, p. 1628). When NASA tanked Prospector, telescopes watched for spectroscopic traces of water vapor, which "would have been a definitive proof of the existence of lunar ice," says astronomer David Goldstein of the University of Texas, Austin. A quick look at the data in August revealed no conspicuous plume. Now, after a detailed analysis, Goldstein was able to report a definitive "no" last week at a meeting of the American Astronomical Society.

The failure doesn't mean there's no ice on the moon, Goldstein says: Prospector may have missed the crater or crashed into a "dry" spot, or the water may be locked up in molecules the spectroscopes couldn't detect. So he and his colleagues are pondering a reprise—perhaps using a defunct communication satellite.

CREDITS: (TOP) NASA; (BOTTOM) USGS